ABSTRACT OF THE DISCLOSURE

A non-destructive read FIFO configured to enable data that has been read from an address in the FIFO in a first read cycle to be re-read from the same address in the FIFO in a subsequent read cycle. When the FIFO is full, data stored at the addresses in the FIFO will be read out of the FIFO multiple times in a sequence in which the data was written into the FIFO. The number of times that the stored data is read out of the FIFO in the sequence in which the data was written into the FIFO is preselected. Therefore, the FIFO can be used to cache a loop of instructions that are to be executed a particular number of times.